

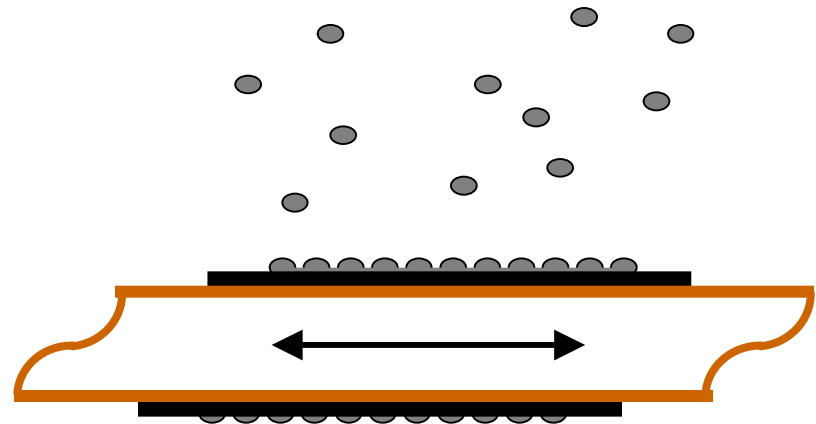
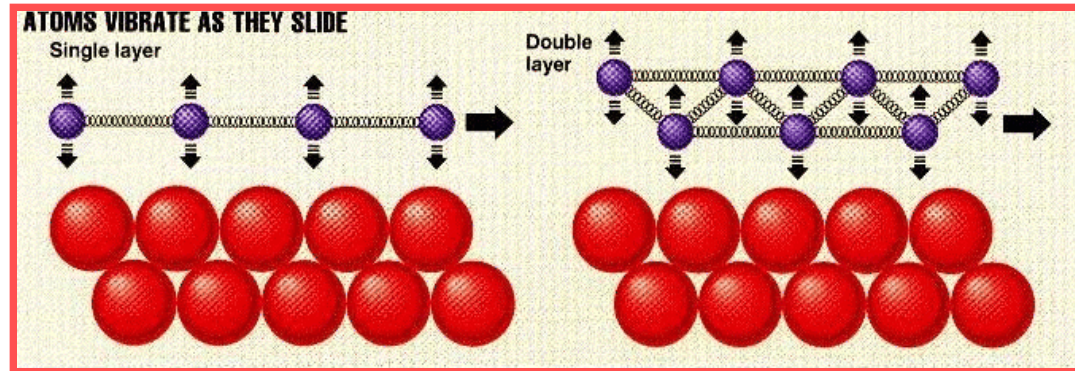
Quartz Crystal Microbalance Studies of Atomic-Scale Friction

Jacqueline Krim, North Carolina State, DMR-0072030

Nanotribology

Our research program is unique world-wide, exploring the nano-scale origins of friction with a quartz crystal microbalance technique that the PI developed in the late 1980's with the support of NSF.

We are currently exploring the energy transfer and frictional heating effects at atomically uniform sliding interfaces, and are extending our efforts to explore the origins of superconductivity-dependent friction, a phenomenon that we discovered in 1998.



Top: Schematic of phononic friction.
Bottom: The Quartz Crystal Microbalance

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Educational:

2 Undergraduates

3 Graduate students

- **J. Krim is a Sigma Xi Distinguished Lecturer for 2002-2003, presenting numerous lectures to general audiences on the topic of atomic-scale friction**

- **J. Krim is the 2002 recipient of the Alumni Outstanding Researcher of the Year Award at North Carolina State University**



REU students Meagan Miller (front, left) and Daryl Purcell (back, 2cd from right) alongside their graduate student mentors Chernojaye, (back, left) Robert Trubic (back, 2cd from left), Tonya Coffey (back, right) and P.I. Krim (front, right)